

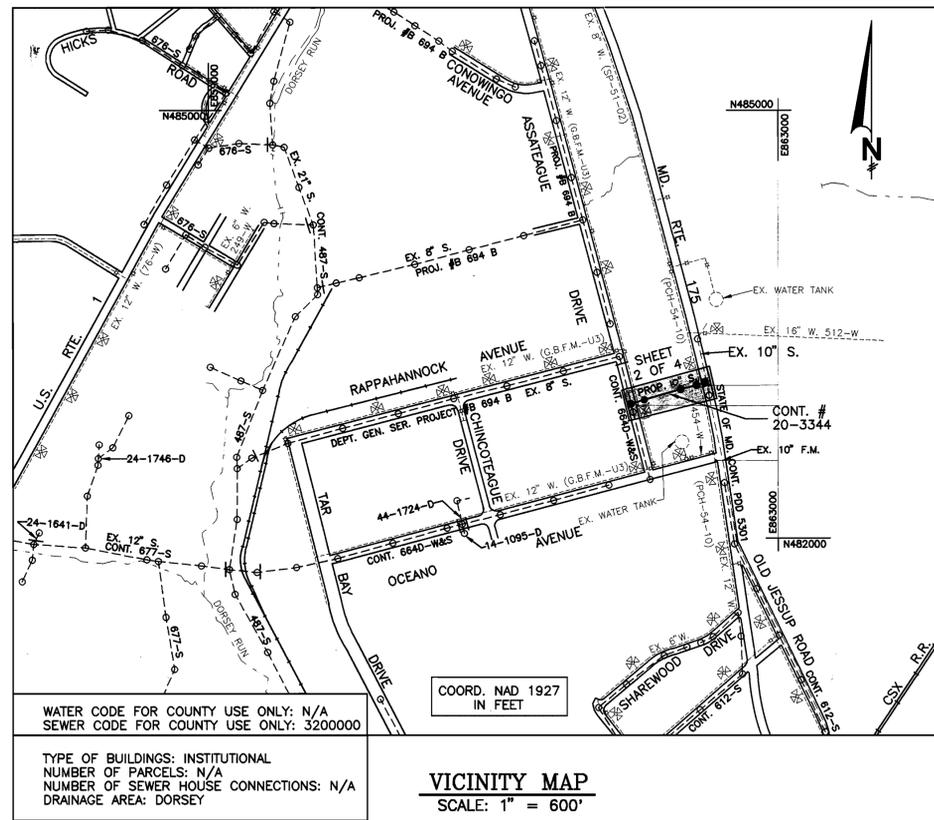
**QUANTITIES**

ITEM	BID	AS-BUILT	MATERIAL SUPPLIER
10" PVC SEWER	400 L.F.	402 L.F.	SDR 35 PVC / B.R.S.
4' DIA. M.H.	3	3	PRECAST / ATLANTIC PRECAST
MONITORING MANHOLE	1	1	FIBERGLASS / ACORN SUPPLY DIST. NANTI FAB
FLOWMETER & SERVICE PANEL	1	1	S/S MULTITRONICS / JIM GILLIN CORP.
DIVERSION VAULT	1	1	PRECAST / ATLANTIC PRECAST
8" D.I.P. CL.52 IN 3/4" STEEL SLEEVE	55 L.F.	55 L.F.	TYTON D.I.P. / B.R.S.
8" D.I.P. CL.52	141 L.F.	141 L.F.	TYTON D.I.P. / B.R.S.
NAME OF UTILITY CONTRACTOR			MATRO INC.
CHECK BOX AS-BUILT DATE			8-7-01
SURVEY / DRAFTING DIVISION			



**GENERAL NOTES**

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES, AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6 INCHES. CLEAR ALL UTILITY POLES BY A 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ANY ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO SCHEDULE THE BRACING OF POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. NOTES CONTAINING THE RESULTS OF THE TEST PIT ARE INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 \*C & P TELEPHONE (597-8585)  
 \*BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES (850-4620)  
 \*BALTIMORE GAS & ELECTRIC CO. - UNDERGROUND DAMAGE CONTROL (787-9068)  
 \*MISS UTILITY - (1-800-257-7777)  
 \*COLONIAL PIPELINE CO. (795-1390)  
 \*BUREAU OF UTILITIES, HOWARD COUNTY DEPT. OF PUBLIC WORKS - (313-4900)
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- ALL SEWER MAINS TO BE PVC UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING / JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER / SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114 (a) OF THE HOWARD COUNTY CODE.
- ALL MANHOLES SHALL BE 4' - 0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- ADJUST PROPOSED MANHOLES IN PAVING TO BE FLUSH WITH EXISTING GRADE.



**SHEET NO. LIST OF DRAWINGS**

- VICINITY MAP & GENERAL NOTES
- PLAN & DETAILS
- PROFILE & DETAILS
- SEDIMENT & EROSION CONTROL DETAILS

**TRAVERSE\***

DESC.	DIST.	BEARING
#0030- A-1	1616.870	32° 44' 37" NE
A-1 - A-2	1028.115	69° 57' 06" SE
A-2 - A-3	377.660	77° 04' 36" SE
A-3 - A-4	506.79	37° 25' 13" SE
A-4 - A-5	595.530	24° 58' 41" SE
A-5 - A-6	984.540	13° 56' 33" SE
A-6 - A-7	538.755	19° 24' 11" SE
A-7 - A-8	654.620	13° 48' 01" SE
A-8 - A-9	520.261	3° 19' 34" SW
A-9 - A-10	437.485	81° 35' 26" NW
A-10 - A-11	330.375	11° 38' 11" NW
A-11 - A-12	347.375	15° 25' 28" NW
A-12 - A-13	584.645	14° 02' 16" NW
A-13 - A-14	1042.200	13° 52' 46" NW
A-14 - A-15	829.365	17° 29' 23" NW
A-15 - A-16	444.770	23° 12' 03" NW
A-16 - A-17	1051.235	62° 33' 11" NW
A-17 - A-18	599.130	35° 28' 09" SW
A-18 - #0030	1060.865	35° 51' 08" SW

\* NAD 1983 - DIST. IN FEET

# PATUXENT INSTITUTE DIVERSION SEWER

## CAPITAL PROJECT S-6165

### CONTRACT NUMBER 20-3344

## HOWARD COUNTY, MARYLAND

## DEPARTMENT OF PUBLIC WORKS

**COORDINATE TABLE\***

PT.#	DESC.	EASTING	NORTHING
0030	TRAVERSE Pt.	418052.8578	166398.2235
A-1	TRAVERSE Pt.	418927.3891	167758.1733
A-2	TRAVERSE Pt.	419893.2040	167405.7218
A-3	TRAVERSE Pt.	420261.2979	167321.2590
A-4	TRAVERSE Pt.	420569.2531	166918.7871
A-5	TRAVERSE Pt.	420820.7279	166378.9371
A-6	TRAVERSE Pt.	421057.9526	165423.4040
A-7	TRAVERSE Pt.	421236.9329	164915.2475
A-8	TRAVERSE Pt.	421393.0844	164279.5242
A-9	TRAVERSE Pt.	421362.8991	163760.1396
A-10	TRAVERSE Pt.	420930.1179	163824.1203
A-11	TRAVERSE Pt.	420863.4814	164147.7053
A-12	TRAVERSE Pt.	420771.0504	164482.7130
A-13	TRAVERSE Pt.	420629.2382	165049.8982
A-14	TRAVERSE Pt.	420379.2359	166061.6888
A-15	TRAVERSE Pt.	420129.9813	166852.6925
A-16	TRAVERSE Pt.	419954.7810	167261.4934
A-17	TRAVERSE Pt.	419021.8553	167746.0364
A-18	TRAVERSE Pt.	418674.2011	167258.0883

\* NAD 1983 METRIC

NOTE: SEDIMENT CONTROL TO BE IMPLEMENTED IN ACCORDANCE WITH VOL. IV SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL AND THESE PLANS.

**ENGINEER'S CERTIFICATION**  
 "I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."  
  
 Date: 1/25/99  
 JOHN E. HARMS JR. & ASSOCIATES, INC.  
 CONSULTING ENGINEERS  
 P.O. BOX 5 PASADENA, MARYLAND 21122

**DEVELOPER'S CERTIFICATION**  
 "I/WE certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certification of Attendance at a Maryland Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project."  
  
 Date: 6/1/99  
 BUREAU OF ENGINEERING  
 DEPARTMENT OF PUBLIC WORKS

REVIEWED FOR HOWARD CO. S.C.D. AND MEETS TECHNICAL REQUIREMENTS.  
  
 U.S.D.A. Natural Resources Service Date: 2/10/99  
 This Development Plan is approved for the soil erosion and sediment control by the Howard County Soil Conservation District.  
  
 Approved Date: 2/10/99  
 HOWARD COUNTY S.C.D.

**MANHOLE LOCATION BY COORDINATE\***

DESC.	EASTING	NORTHING
1	420810	164159
2	420913	164186
3	421199	164258
DIV. VAULT	421383	164305

\* NAD 1983 METRIC

**NOTE:**  
 THE INFORMATION SHOWN HEREON WAS PREPARED FROM NOTES FROM CONTRACTOR/OWNERS RECORDS OR CONSTRUCTION PLANS. THE USER OF THIS INFORMATION SHOULD, PRIOR TO ANY CONSTRUCTION, TEST PIT FOR ACCURATE LOCATION OF STRUCTURE IMPROVEMENTS THAT ARE NOT VISIBLE. WHILE THE INFORMATION SUBMITTED BY THE CONTRACTOR/OWNERS AND INCORPORATED INTO THIS RECORD DRAWING IS ASSUMED TO BE RELIABLE, JOHN E. HARMS, JR. & ASSOCIATES, INC. IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION NOR THE ERRORS OR OMISSIONS WHICH MAY APPEAR ON THIS DOCUMENT AS A RESULT THEREOF.

I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION LOCATED HEREON IS RELIABLE BUT IS SUBJECT TO ANY NOTATION (SEE NOTE ABOVE)  
  
 DATE: 9/2/95  
 STEVEN G. ZAHN  
 PROFESSIONAL ENGINEER #10810

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works: 6/9/99  
 Chief, Bureau of Engineering: 6/1/99  
 Chief, Bureau of Utilities: 6-4-99  
 Chief, Utility Design Division: 6-1-99

JOHN E. HARMS, JR. & ASSOCIATES, INC.  
 CONSULTING ENGINEERS  
 90 GOVERNOR RITCHIE HIGHWAY  
 PASADENA, MARYLAND 21122  
 (410) 647-6000

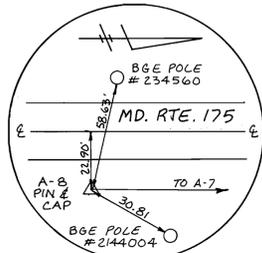


DES: DMD	MLH	REVIS	DATE
	△	REVISED PER COUNTY COMMENTS	7-98
	△	REVISED PER COUNTY COMMENTS	11-98
	△	REVISED PER COUNTY COMMENTS	4-99
	△	AS-BUILTS	9-01
DRN: BLC	BKS		
CHK: SGZ	JMH		
DATE: 9/95	BY: NO	REVISION	DATE

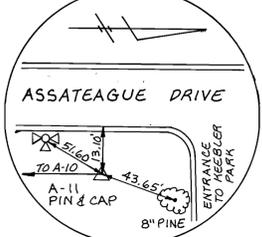
VICINITY MAP & GENERAL NOTES  
 PATUXENT INSTITUTION  
 DIVERSION SEWER  
 600 SCALE MAP #43 BLOCK 8

PATUXENT INSTITUTE DIVERSION SEWER  
 CAPITAL PROJECT S-6165  
 CONTRACT 20-3344  
 ELECTION DISTRICT NO.1 HOWARD COUNTY, MARYLAND

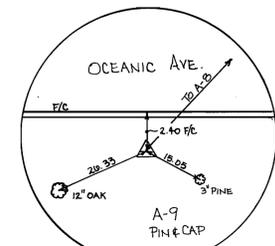
SCALE AS SHOWN  
 SHEET 1 OF 5



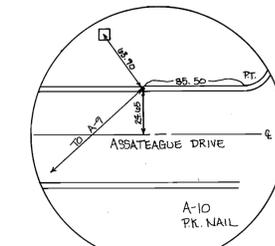
TRAVERSE A-8  
B.M. ELEV. 265.38



TRAVERSE A-11  
B.M. ELEV. 244.86



TRAVERSE A-9  
B.M. EL. 252.29



TRAVERSE A-10  
B.M. EL. 250.22

NOTE: LENGTH OF TRENCH IS LIMITED TO 3 PIPE LENGTHS, OR THAT WHICH CAN BE STABILIZED IN ONE WORK DAY.

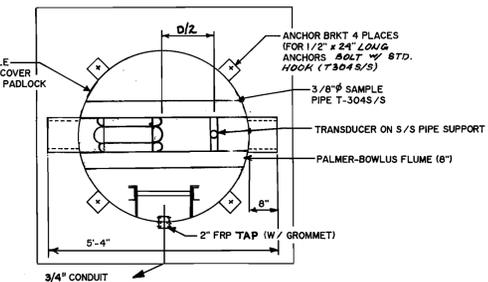
CONTRACTOR TO TEST PIT PRIOR TO ORDERING VAULT AND SLIDE GATES

LIMIT OF CONTRACT  
PROP. MH #1  
CONSTRUCT MH #1  
OVER EXISTING 8"  
SEWER PER HOWARD  
COUNTY STANDARD  
DETAIL G 5.14

NOTE: ENCASE SEWER IN  
STANDARD "FULL"  
CONCRETE ENCASEMENT  
10 FOOT EACH SIDE  
OF WATER MAIN. (SEE  
STD. DETAIL G 2.02)

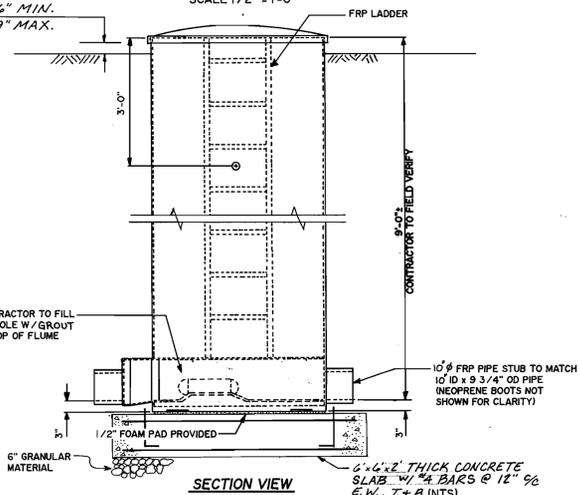
NOTE: LOCATE POWER COMPANY KWH  
METER ON THE EXTERIOR OF THE  
PANEL. COORDINATE INSTALLATION  
WITH POWER COMPANY.

NOTE: HINGED COVER IS NOT SHOWN  
THIS VIEW FOR CLARITY



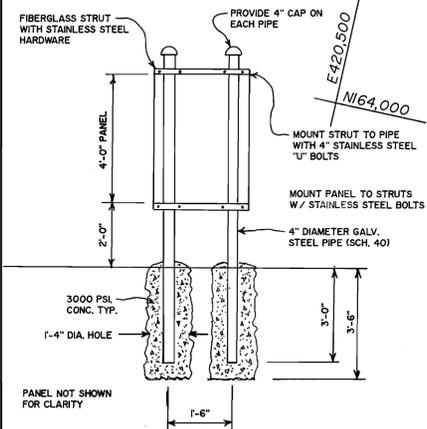
NOTES:  
1. MANHOLE TO BE F.R.P. SEE SPECIFICATIONS  
2. HINGE, HASP, ANCHOR BRACKETS  
& BOLTS TYPE 304 STAINLESS STEEL  
3. NEOPRENE BOOTS SECURED WITH STAINLESS  
STEEL BANDS.

PLAN VIEW  
SCALE 1/2" = 1'-0"

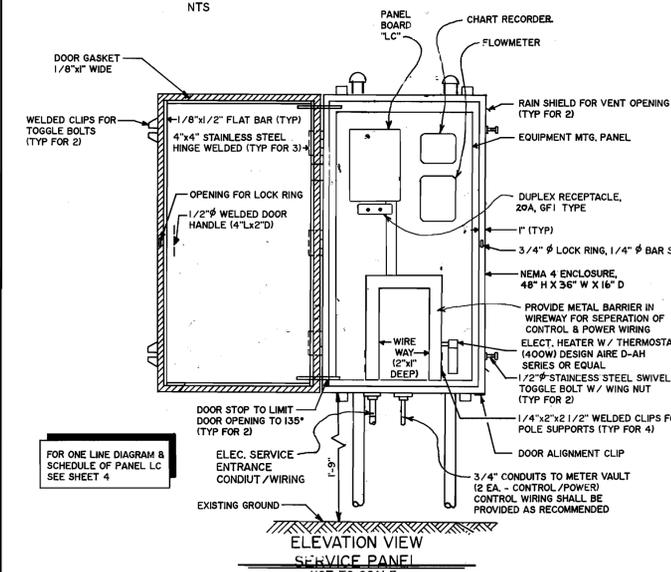


SECTION VIEW  
SCALE 1/2" = 1'-0"

PREFABRICATED METERING MANHOLE



ELECTRICAL PANEL MOUNTING DETAIL



ELEVATION VIEW  
SERVICE PANEL  
NOT TO SCALE

FOR ONE LINE DIAGRAM &  
SCHEDULE OF PANEL LC  
SEE SHEET 4

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works DATE 6-4-99  
Chief, Bureau of Engineering DATE 6-1-99  
Chief, Bureau of Utilities DATE 6-1-99  
Chief, Utility Design Division DATE 6-1-99

JOHN E. HARMS, JR. & ASSOCIATES, INC.  
CONSULTING ENGINEERS  
90 GOVERNOR RITCHIE HIGHWAY  
PASADENA, MARYLAND 21122  
(410) 647-6000



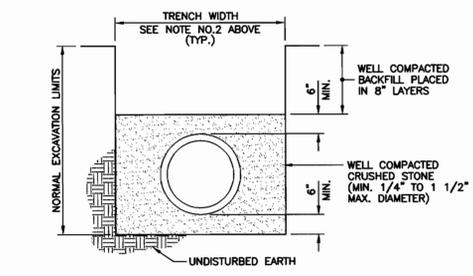
DES: D.M.D.	MLH	REVISED PER COUNTY COMMENTS.	7-98
DRN: B.L.C.	BKS	REVISED PER COUNTY COMMENTS	11-98
CHK: S.G.Z.	JMH	REVISED PER COUNTY COMMENTS	4-99
		AS-BUILTS	9-01
DATE: 9/95	BY	NO.	REVISION

PLAN  
PATUXENT INSTITUTION  
DIVERSION SEWER  
600' SCALE MAP NO. 43 BLOCK NO. 8

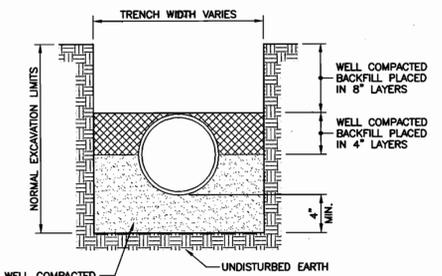
PATUXENT INSTITUTION DIVERSION SEWER  
CAPITAL PROJECT S-6165  
CONTRACT 20-3344  
ELECTION DISTRICT NO 1 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 2 OF 4

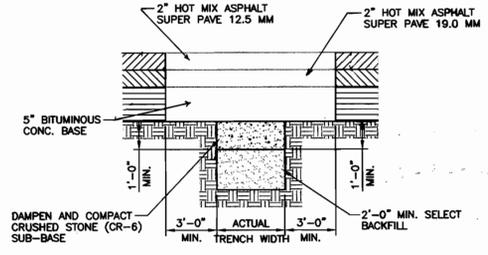
NOTES: 1. WITHIN ROAD RIGHT-OF-WAY, TRENCH COMPACTION DENSITY SHALL BE 95% AS DETERMINED BY A.A.S.H.T.O. T-180-A  
 2. TRENCH COMPACTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATION SECTION 1003.03.19.



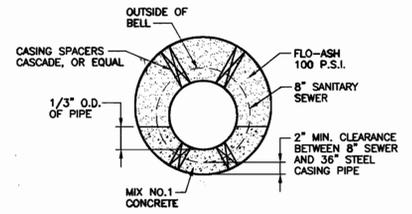
TRENCH FOR P.V.C. PIPE AND HIGH DENSITY POLYETHYLENE PIPE  
 NOT TO SCALE



TRENCH FOR D.I.P. PIPE  
 NOT TO SCALE

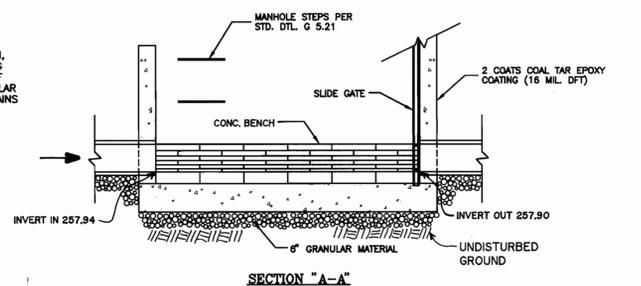


CUTTING AND REPAVING PAVEMENT SECTION ON ASSATEAGUE DRIVE  
 NOT TO SCALE

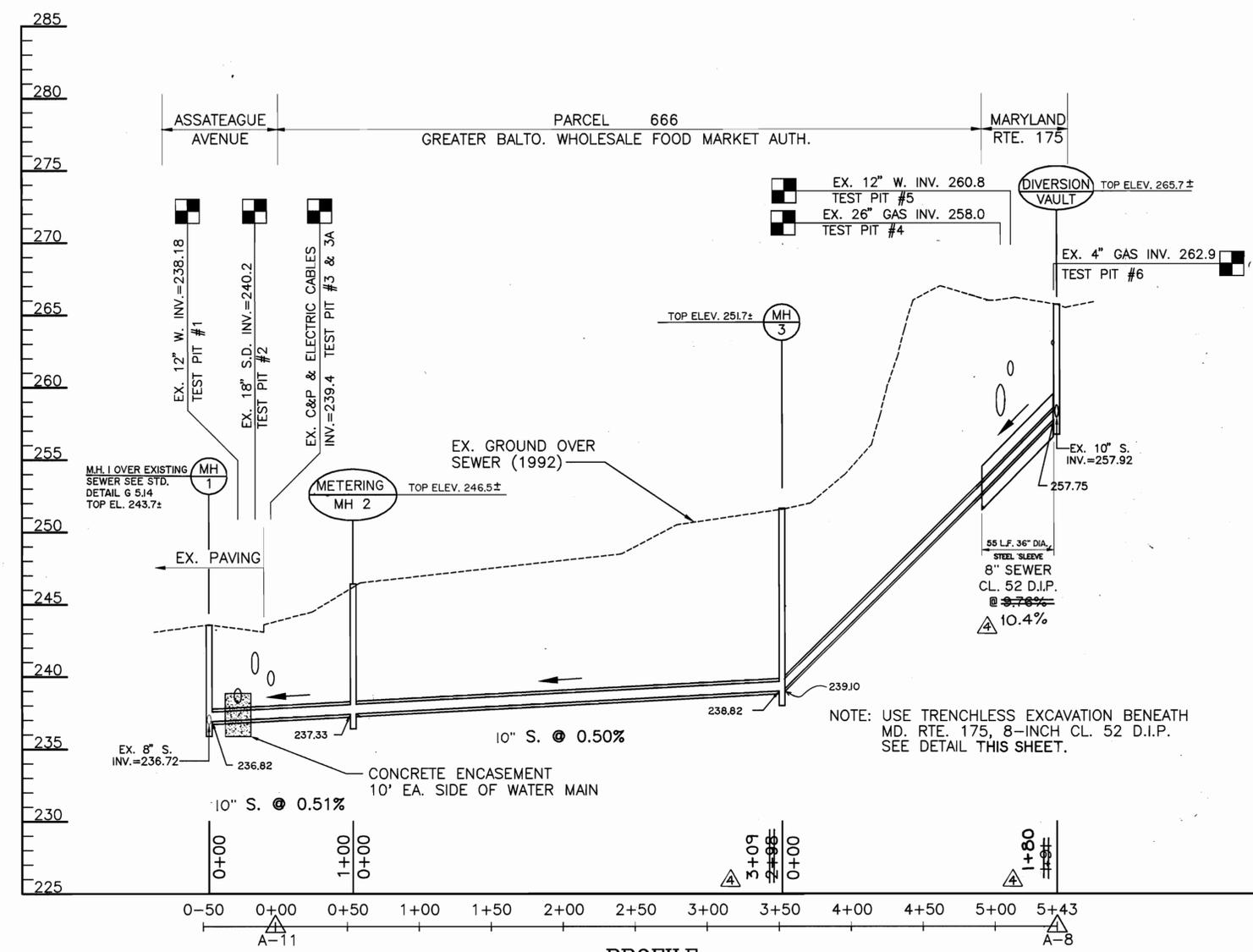


NOTES:  
 1. PROVIDE BRICK BULKHEAD AND JOINT AT END OF CASING AS SHOWN ON HOWARD CO. STD. DETAIL G 9.01.  
 2. FILL ANNULAR SPACE WITH FLO-ASH. CONTRACTOR SHALL PROVIDE CASING SPACERS TO PREVENT FLOTATION OF 8\"/>

CASING DETAIL  
 NOT TO SCALE

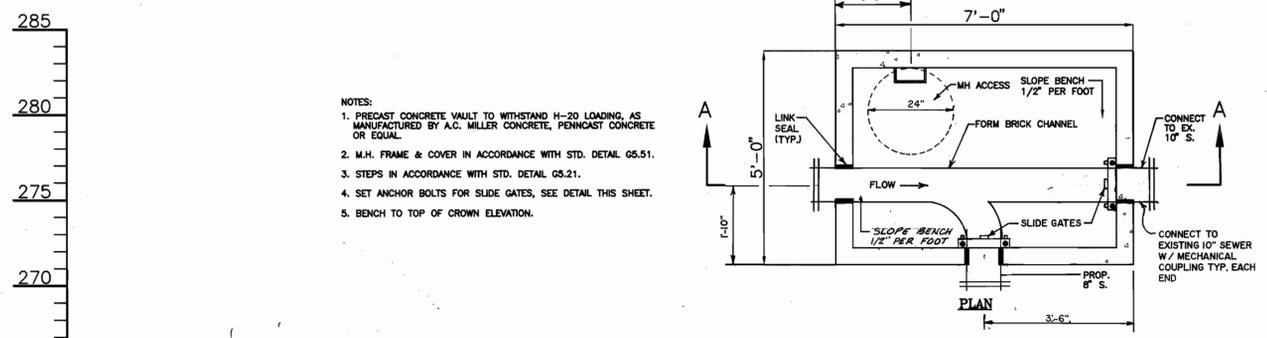


SECTION "A-A"



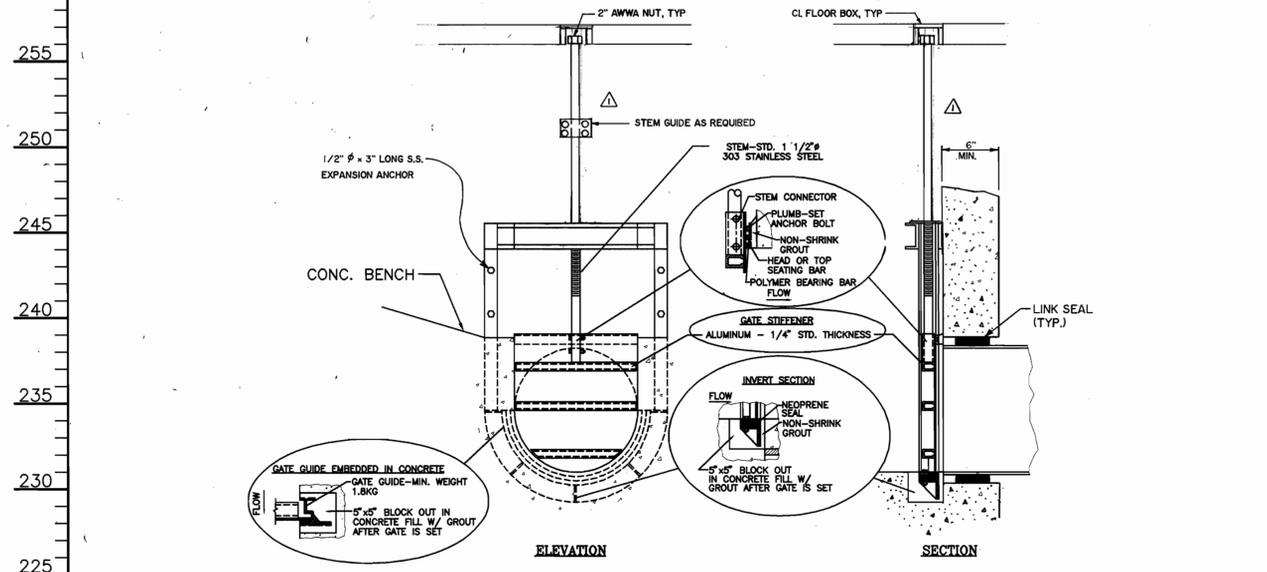
PROFILE  
 SCALE: HORZ. 1"=50'  
 VERT. 1"=5'

\* FOR PLAN VIEW SEE SHEET 2 OF 4



NOTES:  
 1. PRECAST CONCRETE VAULT TO WITHSTAND H-20 LOADING, AS MANUFACTURED BY A.C. MILLER CONCRETE, PENNCAST CONCRETE OR EQUAL.  
 2. M.H. FRAME & COVER IN ACCORDANCE WITH STD. DETAIL G5.51.  
 3. STEPS IN ACCORDANCE WITH STD. DETAIL G5.21.  
 4. SET ANCHOR BOLTS FOR SLIDE GATES, SEE DETAIL THIS SHEET.  
 5. BENCH TO TOP OF CROWN ELEVATION.

DETAIL - DIVERSION VAULT  
 NOT TO SCALE



DETAIL - SLIDE GATES  
 NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 DATE: 6/1/99  
 DATE: 6/1/99

JOHN E. HARMS, JR. & ASSOCIATES, INC.  
 CONSULTING ENGINEERS  
 90 GOVERNOR RITCHIE HIGHWAY  
 PASADENA, MARYLAND 21122  
 (410) 647-6000



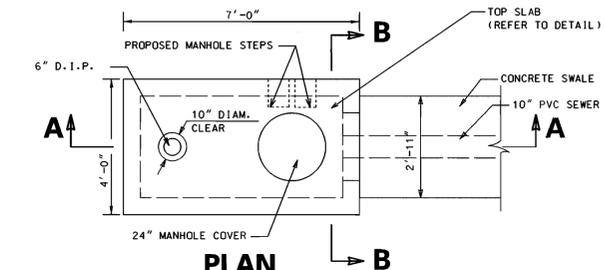
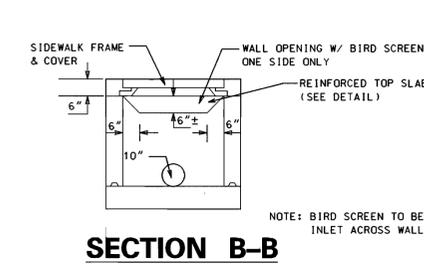
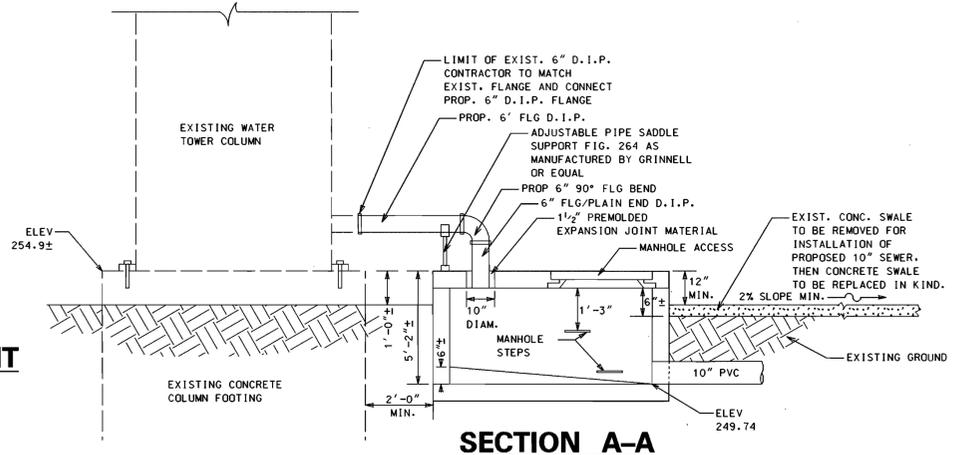
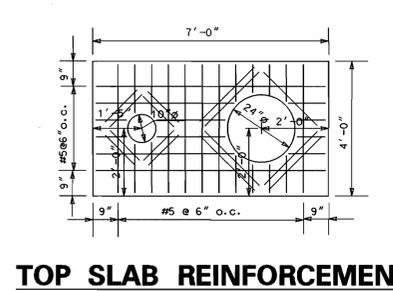
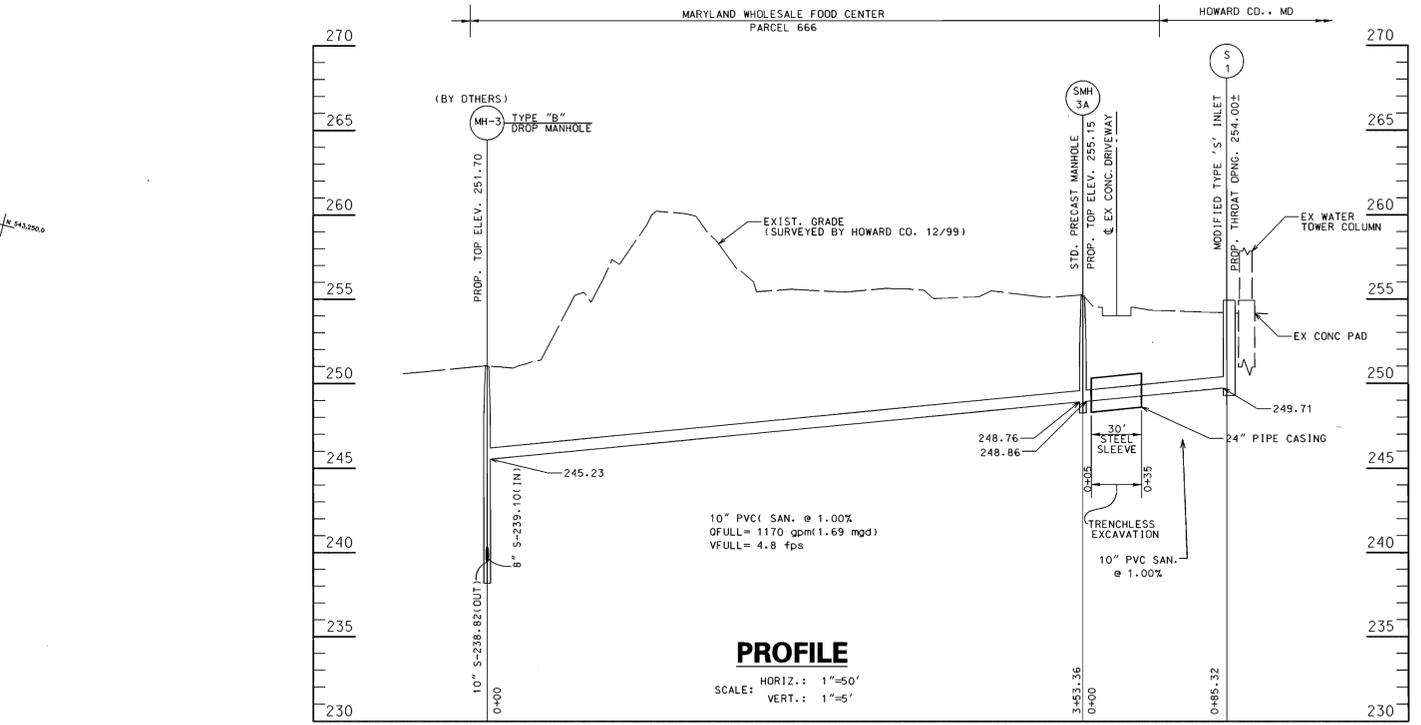
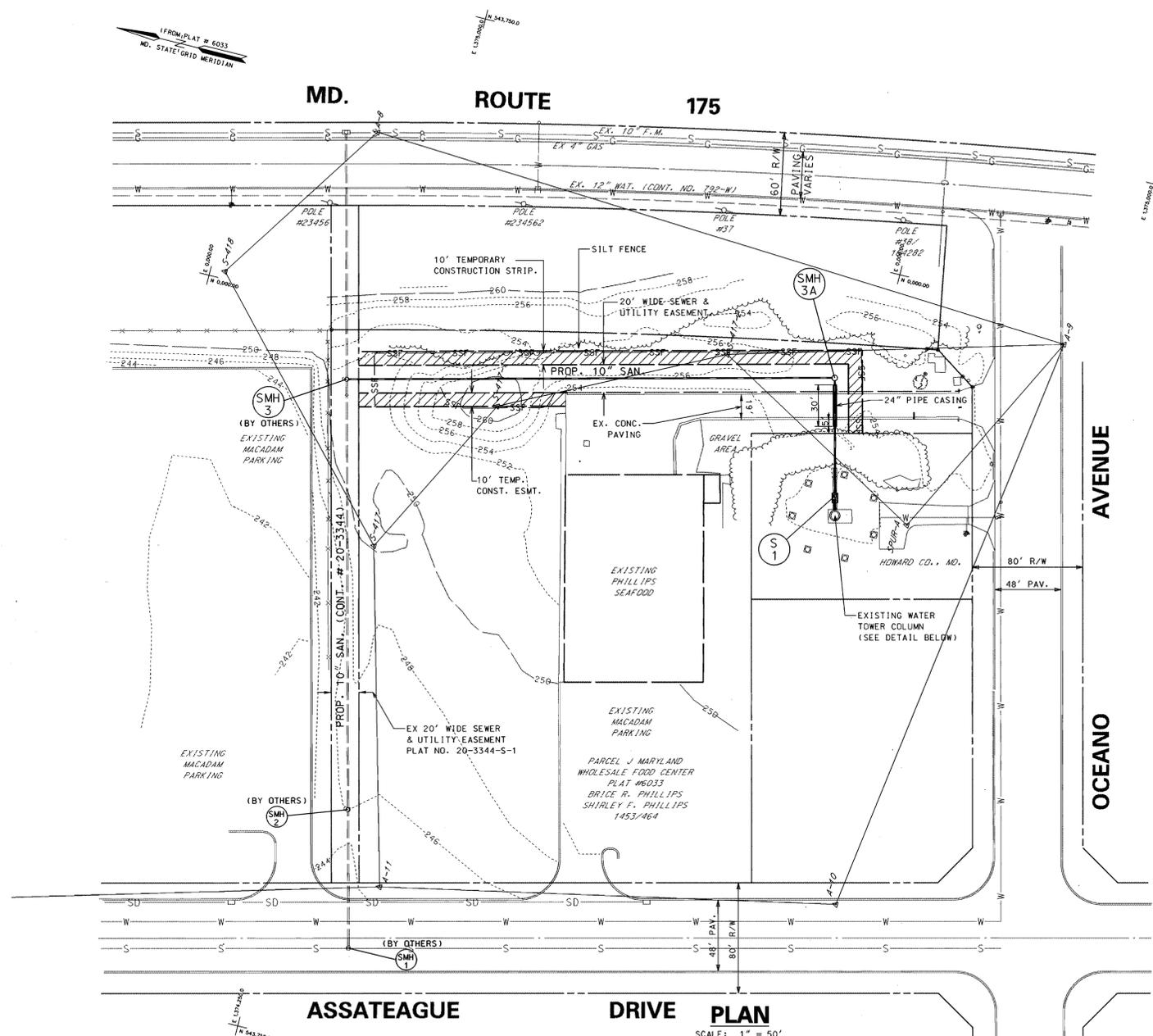
DES: DMD	MLH	REVISD PER COUNTY COMMENTS.	7-98
DRN: BLC	BKS	REVISD PER COUNTY COMMENTS	11-98
CHK: SGZ	JMH	REVISD PER COUNTY COMMENTS	4-99
		AS-BUILTS	9-01
DATE: 9/95	BY: NO	REVISION	DATE

PROFILE  
 PATUXENT INSTITUTION  
 DIVERSION SEWER  
 600 SCALE MAP #43 BLOCK 8

PATUXENT INSTITUTION DIVERSION SEWER  
 CAPITAL PROJECT S-6165  
 CONTRACT 20-3344  
 ELECTION DISTRICT NO.1  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 3 OF 4





QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
6" DIP	L.F.	3		
6" DIP 90° BEND	EA	1		
10" PVC SAN	L.F.	439		
STD. MANHOLE	EA	1		
ADJ PIPE SADDLE	EA	1		
CONC. SWALE REMOVE AND REPLACE IN KIND	L.F.	29		
MOD. DOUBLE TYPE 'S' INLET	EA	1		

NAME OF UTILITY CONTRACTOR: \_\_\_\_\_

CHECKBOX	
AS-BUILT DATE:	
SURVEY AND DRAFTING DIVISION	

HOWARD CO. TRAVERSE			
	HORIZ: NAD 83		VERT
TRAVERSE POINT	NORTHING	EASTING	
S-417-1	543674.729	1374730.338	261.270
S-417-2	543521.771	1374805.521	257.360
A-9	543286.753	1374871.794	
S-417	543737.170	1374610.863	
SPUR-A	543366.188	1374717.543	253.590

STAKEOUT COORDINATES SCHEDULE		
STATION	NORTHING	EASTING
STRUCTURE 1	543421.7950	1374725.6740
MANHOLE 3A	543442.2730	1374808.6830
MH 3(BY OTHERS)	543785.0937	1374723.3152
MH 2(BY OTHERS)	543709.8861	1374421.0513

NOTE: THESE DRAWINGS ARE MADE A PART OF CONTRACT DOCUMENTS ENTITLED "PATUXENT INSTITUTE DIVERSION SEWER", CONTRACT NO. 20-3344, AS PREPARED BY JOHN E. HARMS & ASSOC., INC., AND APPROVED BY HOWARD CO. DPW ON JUNE 9, 1999. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REFERENCED DOCUMENTS.

**STRUCTURE S-1**  
**MODIFIED DOUBLE TYPE 'S' INLET**  
 HO. CO. SD. 4.23  
 SCALE: NTS

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*John E. Harms* 1/24/00  
 DIRECTOR OF PUBLIC WORKS DATE

*Robert J. Sporn* 1-24-00  
 CHIEF BUREAU OF ENGINEERING DATE

*John E. Harms* 1-31-00  
 CHIEF BUREAU OF UTILITIES DATE

*Robert J. Sporn* 1-24-00  
 CHIEF WATER AND SEWER DESIGN DIVISION DATE

ENGINEERS AND PLANNERS  
 10 NORTH PARK DRIVE  
 HUNT VALLEY, MD. 21030-1888  
 (410) 316-7800

DES: TW	KKS	AS BUILTS	9-01
DRN: JE			
CHK:			
DATE: 10/99			
BY: NO.		REVISION	DATE

JESSUP TANK TO THE DIVERSION SEWER  
 CAPITAL PROJECT No. S-6185  
 CONTRACT No. 20-3344  
 ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 5 OF 5  
 1 OF 1

600' SCALE MAP NO. 43 BLOCK NO. 8